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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/835,649

Applicant(s)

BAUM ET AL.

Examiner

Toan D. Nguyen

Art Unit

2665

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 6-57 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 24-45 and 48-57 is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-8, 12-24, 46 and 47 is/are rejected.
- 7) ☒ Claim(s) 9-11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 9-11, 13-14, 20, 25-38, 40-46, 48, 50-51, 53-55 and 57 are objected to because of the following informalities:

Claim 9 line 18, it is suggested to change "a second type" to --- the second type -
--.

Claim 9 line 19, it is suggested to change "to at least one end user terminal" to ---
to the at least one end user terminal ---.

Claim 10 line 1, it is suggested to change "A" to --- The ---.

Claim 10 line 5, it is suggested to change "content data" to --- the content data ---

Claim 11 line 1, it is suggested to change "A" to --- The ---.

Claim 13 line 2, it is suggested to change "content data" to --- the content data ---

Claim 14 line 2, it is suggested to change "content data" to --- the content data ---

Claim 20 line 2, it is suggested to change "of content data" to --- of the content
data ---.

Claim 25 line 16, it is suggested to change "wherein each logical communication
circuit" to --- wherein each of the layer-2 protocol each logical communication circuit ---.

Claim 25 line 25, it is suggested to change "content data" to --- the content data -
--.

Claim 26 line 1, it is suggested to change "A" to --- The ---.

Claim 26 line 3, it is suggested to change "respective customer premises" to --- the respective customer premises ---.

Claim 26 line 9, it is suggested to change "a respective logical communication circuit" to --- the respective one of the logical communication circuits ---.

Claim 26 line 11, it is suggested to change "content stored" to --- the content data stored ---.

Claim 26 line 13, it is suggested to change "the respective logical communication circuit" to --- the respective one of the logical communication circuits ---.

Claim 27 line 1, claim 28 line 1, claim 29 line 1, claim 30 line 1, claim 31 line 1, claim 32 line 1, claim 33 line 1, claim 34 line 1, claim 35 line 1, claim 36 line 1, claim 37 line 1, and claim 38 line 1, they are suggested to change "A" to --- The ---.

Claim 40 line 1, claim 41 line 1, claim 42 line 1, claim 43 line 1, claim 44 line 1, claim 45 line 1, they are suggested to change "A" to --- The ---.

Claim 42, it is suggested to change "wherein provisioning" to --- wherein the provisioning ---.

Claim 44 line 6, it is suggested to change "the subscriber logical communication" to --- the respective subscriber logical communication circuit ---

Claim 44 line 14, it is suggested to change "the respective the logical communication circuit" to --- the respective subscriber logical communication circuit ---

Claim 46 line 4, it is suggested to change "which central content server" to --- which the central content server ---.

Claim 48 line 4, it is suggested to change "which central content server" to ---
which the central content server ---.

Claim 48 line 29, it is suggested to change "a second type" to --- the second type
---.

Claim 48 line 35, it is suggested to change "content data" to --- the content data -
--.

Claim 49 line 1, claim 41 line 1, it is suggested to change "A" to --- The ---.

Claim 50 line 16, it is suggested to change "wherein each logical communication
circuit" to --- wherein each of the layer-2 protocol each logical communication circuit ---.

Claim 50 line 24, it is suggested to change "of content data" to --- of the content
data ---.

Claim 50 line 27, it is suggested to change "respective customer premises" to ---
the respective customer premises ---.

Claim 50 line 35, it is suggested to change "a respective logical communication
circuit" to --- the respective logical communication circuit ---.

Claim 50 line 37, it is suggested to change "content stored" to --- the content data
stored ---.

Claim 51 line 1 and claim 52 line 1, they are suggested to change "A" to --- The ---

Claim 53 line 20, it is suggested to change "content data" to --- the content data -
--.

Claim 54 line 1, it is suggested to change "A" to --- The ---.

Claim 55 line 23, it is suggested to change "for content distribution" to --- for the content distribution ---.

Claim 55 line 24, it is suggested to change "of content data" to --- of the content data ---.

Claim 55 line 26, it is suggested to change "for content distribution" to --- for the content distribution ---.

Claim 57 line 25, it is suggested to change "the subscriber logical communication" to --- the respective subscriber logical communication circuit ---.
Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. Claims 9-11, 39-45 and 57 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 line 9, recites the limitation "the customer premises" lack clear antecedent basis.

Claim 39 line 22, recites the limitation "the customer traffic." lack clear antecedent basis.

Claim 44 line 4, recites the limitation "the subscriber" lack clear antecedent basis.

Claim 46 line 12 and lines 14-16, recites the limitation "the at least one second server" lack clear antecedent basis.

Claim 48 line 21, recites the limitation "the customer premises" lack clear antecedent basis.

Claim 57 line 23, recites the limitation "the subscriber" lack clear antecedent basis.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2 and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Greenwood et al (US 5,568,181).

For claim 1, Greenwood et al disclose multimedia distribution over wide area network, comprising the steps:

determining unused bandwidth on a common link of an access data network carrying subscriber traffic (figure 3, reference 33) and over which the central content server (figure 1, reference 10) located in a hub site and the at least one local content server (figure 1, reference 14) located in a central office communicate (col. 5 lines 29-34); and

transmitting content data stored on the central content server (figure 1, reference 10) to the at least one local content server (figure 1, reference 14) substantially on the determined unused bandwidth (col. 5 lines 18-23).

For claim 2, Greenwood et al disclose wherein said at least one local content server (figure 1, references 14) comprises a server located in a vertical services domain

(figure 1, reference 16) proximate to at least one end user terminal (figure 1, reference 17) (col. 3 lines 20-23).

For claim 6, Greenwood et al disclose storing (figure 1, reference 11) the content data transmitted to the at least one local content server (figure 1, references 14) on the at least one local content server (col. 3 lines 15-17); and transmitting the content data stored on the at least one local content server (figure 1, reference 14) to at least one end user terminal (figure 1, reference 17) proximate to the at least one local content server (col. 3 lines 18-20).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 3, 7-8, 17, 46 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greenwood et al (US 5,568,181) in view of Johnson et al (US 6,775,271).

For claims 3, 7-8 and 17, Greenwood et al do not disclose wherein the vertical services domain is located in a central office that provides Digital Subscriber Line (DSL) service to the at least one end user terminal. In an analogous art, Johnson et al disclose wherein the vertical services domain is located in a central office that provides Digital Subscriber Line (DSL) service (figure 1, reference 16) to the at least one end user terminal (figure 1, reference 12) (col. 2 lines 15-17, col. 3 lines 57-58 and col. 4 lines 3-7).

Johnson et al disclose further:

transmitting the content data stored on the at least one second server (figure 1, reference 24) to a data switch (ATM switch means) proximate to the at least one second server (figure 1, reference 24, col. 7 lines 18-27 and col. 8 lines 39-42);

integrating the content data transmitted from the at least one second server (figure 1, reference 24) with other data destined to at least one end user terminal (figure 1, reference 12) received at the data switch via the common link (col. 7 lines 18-27);
and

distributing the integrated data from the data switch to a link to equipment of the at least one end user terminal via a multiplexer (figure 7B, reference step 170, col. 5 lines 31-48, col. 12 lines 41-44 and col. 14 lines 40-41 as set forth in claim 7); wherein the multiplexer is a Digital Subscriber Line Access Multiplexer (DSLAM) (col. 5 lines 40-

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42 as set forth in claim 8); wherein the common link of the network also carries logical circuits for wide area data communications of a plurality of end user terminals (col. 4 lines 14-16 and col. 6 lines 1-5 as set forth in claim 17).

One skilled in the art would have recognized a central office that provides Digital Subscriber Line (DSL) service to the at least one end user terminal to use the teachings of Johnson et al in the system of Greenwood et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use the central office that provides Digital Subscriber Line (DSL) service to the at least one end user terminal as taught by Johnson et al in Greenwood et al with the motivation being to communicate xDSL signals that include, depending on traffic characteristics at the time, voice signals, data signals, or both voice signals and data signals (col. 4 lines 5-7).

For claims 46-47, Greenwood et al disclose multimedia distribution over wide area network, comprising the steps:

determining unused bandwidth on a common link of an access data network carrying subscriber traffic (figure 3, reference 33) and over which the central content server (figure 1, reference 10) located in a hub site and the at least one local content server (figure 1, reference 14) located in a central office communicate (col. 5 lines 29-34); and

transmitting content data stored on the central content server (figure 1, reference 10) to the at least one local content server (figure 1, reference 14) substantially on the determined unused bandwidth (col. 5 lines 18-23).

storing (figure 1, reference 11) the content data transmitted to the at least one local content server (figure 1, references 14) on the at least one local content server (col. 3 lines 15-17); and

transmitting the content data stored on the at least one local content server (figure 1, reference. 14) to at least one end user terminal (figure 1, reference 17) proximate to the at least one local content server (col. 3 lines 18-20).

However, Greenwood et al do not disclose wherein the step of transmitting the content data stored on the at least one second server to the at least one end user terminal comprises the steps of:

transmitting the content data stored on the at least one second server to a data switch proximate to the at least one second server,

integrating the content data transmitted from the at least one second server with other data destined to at least one end user terminal received at the data switch via the common link, and

distributing the integrated data from the data switch to a link to equipment of the at least one end user terminal via a multiplexer.

In an analogous art, Johnson et al disclose wherein the step of transmitting the content data stored on the at least one second server to the at least one end user terminal comprises the steps of:

transmitting the content data stored on the at least one second server (figure 1, reference 24) to a data switch (ATM switch means) proximate to the at least one second server (figure 1, reference 24, col. 7 lines 18-27 and col. 8 lines 39-42),

integrating the content data transmitted from the at least one second server (figure 1, reference 24) with other data destined to at least one end user terminal (figure 1, reference 12) received at the data switch via the common link (col. 7 lines 18-27), and

distributing the integrated data from the data switch to a link to equipment of the at least one end user terminal via a multiplexer (figure 7B, reference step 170, col. 5 lines 31-48, col. 12 lines 4144 and col. 14 lines 40-41). Johnson et al disclose wherein the multiplexer is a Digital Subscriber Line Access Multiplexer (DSLAM) (col. 5 lines 40-42 as set forth in claim 47).

One skilled in the art would have recognized transmitting the content data stored on the at least one second server to a data switch proximate to the at least one second server to use the teachings of Johnson et al in the system of Greenwood et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use the transmitting the content data stored on the at least one second server to a data switch proximate to the at least one second server as taught by Johnson et al in Greenwood et al with the motivation being to provide Layer-2 switching functionality that is appropriate for a certain types of signals, such as voice signals, that are normally transported end-to-end by specific dedicated ATM switched virtual circuits (SVCs) or permanent virtual circuits (PVCs) (col. 5 lines 2-6).

8. Claims 12-13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greenwood et al (US 5,568,181) in view of Ghanwani et al (US 6,185,187).

For claims 12-13 and 16, Greenwood et al disclose wherein a part of the bandwidth of the common link is reserved for transmitting the content data stored on the central content server (figure 1, reference 10) to the at least one local content server (figure 1, reference 14, col. 5 lines 18-23 and col. 5 lines 29-34). However, Greenwood et al do not disclose to prevent the loss of a session between the central content server and the at least one local content server. In an analogous art, Ghanwani et al disclose to prevent the loss of a session between the central content server and the at least one local content server (col. 1 lines 43-48). Ghanwani et al disclose the steps of determining unused bandwidth and transmitting content data utilize priority and queuing in at least one node of the access data network (col. 1 lines 28-54), to implement a minimum bandwidth (col. 5 lines 47-49) and provide additional bandwidth as available on the common link, for the transmitting of the content data over the common link (col. 1 lines 45-46 as set forth in claim 13); wherein the transmitting step utilizes an unspecified bit rate service through the common link (col. 1 lines 51-52 as set forth in claim 16).

One skilled in the art would have recognized prevent the loss of a session to use the teachings of Ghanwani et al in the system of Greenwood et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use the prevent the loss of a session as taught by Ghanwani et al in Greenwood et al's system with the motivation being to conform to it ACR (col. 1 lines 47-48).

9. Claims 14-15, 18-19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greenwood et al (US 5,568,181) in view of Davies et al (US 6,483, 805).

For claims 14-15, Greenwood et al disclose wherein the steps of determining unused bandwidth and transmitting content data (figure 3, col. 5 lines 18-34). However, Greenwood et al do not disclose implement a congestion mechanism to prevent data lost and utilize unused bandwidth. In an analogous art, Davies et al disclose implement a congestion mechanism to prevent data lost and utilize unused bandwidth (col. 8 lines 53-61). Davies et al disclose wherein the congestion mechanism comprises Transmission Control Protocol (TCP) (col. 8 line 53 as set forth in claim 15).

One skilled in the art would have recognized implement a congestion mechanism to prevent data lost and utilize unused bandwidth to use the teachings of Davies et al in the system of Greenwood et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use the implement a congestion mechanism to prevent data lost and utilize unused bandwidth as taught by Davies et al in Greenwood et al's system with the motivation being to achieve reliability a system of positive acknowledgements by the receiving station is used (col. 8 lines 48-52).

For claims 18-19, Greenwood et al disclose multimedia distribution over wide area network, comprising the steps:

at least one machine readable medium (figure 1, col. 2 lines 55-57); and programming code, carried by the at least one machine readable medium, for execution by at least one computer, wherein the programming code comprises:

for determining unused bandwidth on a portion of a common link of an access data network carrying subscriber traffic and over which the first server (figure 1,

reference 10) and the at least second server (figure 1, reference 14) located in a central office communicate (col. 5 lines 29-34); and

a first transmitting mechanism for causing transmission of content data stored on the first server (figure 1, reference 10) to the at least one second server (figure 1, reference 14) substantially on the determined unused bandwidth (col. 5 lines 18-23 and col. 5 lines 29-34).

However, Greenwood et al do not disclose a congestion mechanism. In an analogous art, Davies et al disclose a congestion mechanism (col. 8 lines 53-56). Davies et al disclose wherein the congestion mechanism comprises Transmission Control Protocol (TCP) (col. 8 line 53 as set forth in claim 19),

One skilled in the art would have recognized implement a congestion mechanism to prevent data lost and utilize unused bandwidth to use the teachings of Davies et al in the system of Greenwood et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use the implement a congestion mechanism to prevent data lost and utilize unused bandwidth as taught by Davies et al in Greenwood et al's system with the motivation being to achieve reliability a system of positive acknowledgements by the receiving station is used (col. 8 lines 48-52).

For claim 22, Greenwood et al disclose wherein the programming code comprises a second transmitting mechanism for causing the transmission of the content data stored on the at least one second server (figure 1, reference 14) to at least one end user (figure 1, reference 17) proximate to the at least one second server (col. 3 lines 18-20).

10. Claims 20-21 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greenwood et al (US 5,568,181) in view of Davies et al (US 6,483, 805) further in view of Ghanwani et al (US 6,185,187).

For claims 20-21, Greenwood et al in view of Davies et al do not disclose wherein the first transmitting mechanism is for causing the transmission of content data using an unspecified bit rateservice. In an analogous art, Ghanwani et al disclose wherein the first transmitting mechanism is for causing the transmission of content data using an unspecified bit rate service (col. 1 lines 51-52). Ghanwarii et al disclose further wherein the first transmitting mechanism comprises means for prioritizing and queuing traffic for transport over the common link, including the content data (col. 1 lines 28-54), so as to provide a minimum guaranteed bandwidth (col. 5 lines 47-49) and provide additional bandwidth as available, for the transport of the content data (col. 1 lines 45-46 as set forth in claim 21).

One skilled in the art would have recognized wherein the first transmitting mechanism is for causing the transmission of content data using an unspecified bit rate service to use the teachings of Ghanwam et al in the system of Greenwood et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use the unspecified bit rate service as taught by Ghanwani et al in Greenwood et al's system with the motivation being to provide no flow control and no guarantees for loss or delay (col. 1 lines 53-54).

For claim 24, Greenwood et al disclose wherein apart of the bandwidth of the common link between the first (figure 1, reference 10) and second server (figure 1,

reference 14) and the at least one second server is reserved for transmitting the content data stored on the first server (figure 1, reference 10) to the at least one second server (figure 1, reference 14) (figure 3, col. 5 lines 18-23).

However, Greenwood et al do not disclose to prevent the loss of a session between the first server and the at least one second server. In an analogous art, Ghanwani et al disclose to prevent the loss of a session between the first server and the at least one second server (col. 1 lines 43-48).

One skilled in the art would have recognized prevent the loss of a session to use the teachings of Ghanwani et al in the system of Greenwood et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use the prevent the loss of a session as taught by Ghanwani et al in Greenwood et al's system with the motivation being to conform to it ACR (col. 1 lines 47-48).

11. Claims 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Greenwood et al (US 5,568,181) in view of Davies et al (US 6,483, 805) further in view of Johnson et al (US 6,775,271).

Greenwood et al in view of Davies et al do not disclose: causes transmission of the content data stored on the at least one second server to at least one ATM switch, wherein the at least one ATM switch is proximate to the at least one second server, and the at least ATM switch is an endpoint of the common link; causes integration of the content data transmitted from the at least one second server with data destined to at least one end user, at the ATM switch; and causes the distribution of the integrated data to the at least one end user via a multiplexer. In an analogous art, Johnson et al

disclose: causes transmission of the content data stored on the at least one second server (figure 1, reference 24) to at least one ATM switch, wherein the at least one ATM switch is proximate to the at least one second server, and the at least ATM switch is an endpoint of the common link (figure 1, reference 24, col. 7 lines 18-27 and col. 8 lines 39-42); causes integration of the content data transmitted from the at least one second server (figure 1, reference 24) with data destined to at least one end user, at the ATM switch (col. 7 lines 18-27); and causes the distribution of the integrated data to the at least one end user via a multiplexer (figure 7B, reference step 170, col. 5 lines 31-48, col. 12 lines 41-44 and col. 14 lines 40-41).

One skilled in the art would have recognized causes transmission of the content data stored on the at least one second server to at least one ATM switch to use the teachings of Johnson et al in the system of Greenwood et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use the causes transmission of the content data stored on the at least one second server to at least one ATM switch as taught by Johnson et al in Greenwood et al's system with the motivation being to convert incoming packetized signals, such as EP packets received on link 20, to ATM frames (col. 14 lines 24-26).

Allowable Subject Matter

12. Claims 9-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. Claim 25-45 and 48-57 are allowed.

The following is an examiner's statement of reasons for allowance:

Regarding to claim 25, the prior art fails to teach a combination of the steps of:

a second network domain coupled locally to the access switch;

a local content server located in a central office for storing content data coupled to the second network domain; and

a logical communication circuit for content distribution between the central content server and the local content server provisioned through the access switch and the high-speed data link, the provisioning of the logical communication circuit for content distribution enabling communication of content data between the communication access node and the access switch over bandwidth unused by traffic on the layer-2 protocol logical communication circuits, in the specific combination as recite in claim 25.

Regarding to claim 39, the prior art fails to teach a combination of the steps of:

a logical circuit between the central content server and the local content server for transport of content data between the servers, wherein provisioning associated with the logical circuit in the hub data switch or in the access switch allocates otherwise available bandwidth to the logical circuit within the high-speed data link between the access switch and the hub data switch when not otherwise used by the customer traffic, in the specific combination as recite in claim 39.

Regarding to claim 48, the prior art fails to teach a combination of the steps of:

forwarding each detected transmission of a second type, different from the first transmission type, to a second network domain logically separate from the first network domain, wherein the at least one local content server is coupled to the second network

domain to receive at least one transmission of a second type for control of the step of transmitting the content data stored on the at least one local content server to at least one end user terminal proximate to the at least one local content server, and

receiving second downstream transmissions intended for the at least one end user terminal from the second network domain at the data switch, content data from the at least one local content server; and

inserting the second downstream transmissions into the logical communication circuit, to combine the first and second downstream transmission for communication over the logical communication circuit from the data switch to the at least one end user terminal, in the specific combination as recite in claim 48.

Regarding to claim 50, the prior art fails to teach a combination of the steps of:

a second network domain coupled locally to the access switch; a local content server for storing content data coupled to the second network domain;

a logical communication circuit for content distribution between the central content server and the local content server provisioned through the access switch and the high-speed data link, the provisioning of the logical communication circuit for content distribution enabling communication of content data between the communication access node and the access switch over bandwidth unused by traffic on the layer-2 protocol logical communication circuits;

forward each detected transmission of a second type, different from the first transmission type, to the second network domain; receive second downstream transmissions intended for the one customer premises from the second network

domain, wherein content stored on the local content server is transmitted to the one customer premises over at least some of the second downstream transmissions; and

insert the second downstream transmissions into the respective logical communication circuit, to combine the first and second downstream transmissions for transport via one of the digital subscriber line transceivers which serves the one customer premises, in the specific combination as recite in claim 50.

Regarding to claim 53, the prior art fails to teach a combination of the steps of:
a second network domain coupled locally to the access switch;
a local content server for storing content data coupled to the second network domain; and

a logical communication circuit for content distribution between the central content server and the local content server provisioned through the access switch and the high-speed data link, the provisioning of the logical communication circuit for content distribution enabling communication of content data between the communication access node and the access switch over bandwidth unused by traffic on the layer-2 protocol logical communication circuits, wherein the first transmission type comprises a type of the local area network protocol adapted for internetwork service provider applications, in the specific combination as recite in claim 53.

Regarding to claim 55, the prior art fails to teach a combination of the steps of
a second network domain coupled locally to the access switch;

a local content server for storing content data coupled to the second network domain; and

a logical communication circuit for content distribution between the central content server and the local content server provisioned through the access switch and the high-speed data link, the provisioning of the logical communication circuit for content distribution enabling communication of content data between the communication access node and the access switch over bandwidth unused by traffic on the layer-2 protocol logical communication circuits, wherein each provisioning of the logical communication circuit for content distribution assigns unspecified bit rate service thereto with an associated minimum service guarantee, in the specific combination as recite in claim 55.

Regarding to claim 56, the prior art fails to teach a combination of the steps of - a logical circuit between the central content server and the local content server for transport of content data between the servers, wherein provisioning associated with the logical circuit in the hub data switch or in the access switch allocates otherwise available bandwidth to the logical circuit within the high-speed data link between the access switch and the hub data switch when not otherwise used by customer traffic, wherein the logical circuit comprises at least one Asynchronous Transfer Mode (ATM) permanent virtual circuit (PVC), wherein the at least one ATM PVC is provisioned to provide a guaranteed minimum bandwidth in combination with unspecified bit rate service for the logical circuit within the high-speed data link, in the specific combination as recite in claim 56.

Regarding to claim 57, the prior art fails to teach a combination of the steps of

a logical circuit between the central content server and the local content server for transport of content data between the servers, wherein provisioning associated with the logical circuit in the hub data switch or in the access switch allocates otherwise available bandwidth to the logical circuit within the high-speed data link between the access switch and the hub data switch when not otherwise used by customer traffic; the access switch extracts each detected transmission of a type other than the first transmission type from the respective logical communication circuit for routing to the vertical services network, in the specific combination as recite in claim 57.

Response to Arguments

14. The applicant argues with respect to claim 1, that Greenwood's bandwidth determination is entirely different from the determination required by the claim, because the determination required by claim 1 is simply a determination of unused bandwidth, not a determination of whether there is unused bandwidth adequate to some purpose, which is what Greenwood teaches. The examiner disagrees. Applicant's attention is directed to Greenwood patent at col. 5 lines 29-34 (figure 3, reference step 33) where Greenwood clearly teaches "If adequate bandwidth is available in WAN 13 (determining unused bandwidth means) to transmit the requested video file from library 11 to the local cache, as determined by decision box 33". The applicant argues that Greenwood in no way teaches or suggests the local area server 14 be located in a central office. The examiner disagrees. In figure 7, according the specification on page 40 lines 5-9, "For example, the first remote central office 15₁ includes one or more DLAMS 17₁ and a VSI ATM switch 19₁." The specification further teaches "The first remote central office

15₁ also includes a local data network forming the first vertical services domain 13₁. Of note for purposes of this discussion, the equipment connected to the vertical service domain 13₁ includes a local content server 32₁, for example for content downloading as might be used in an on-demand service or the like.” In figure 1, Greenwood teaches local area server 14 and local area network 16 are inherently constituted a central office. The applicant argues that Greenwood does not participate transmitting content data “substantially on the determined unused bandwidth” because Greenwood teaches that video data will not be transmitted at all absent “adequate bandwidth. The examiner disagrees. Applicant attention is directed to Greenwood patent at col. 5 lines 18-27 where Greenwood clearly teaches “as determined by decision box 32, decision box 33 is entered where it is determined whether or not adequate bandwidth is available in WAN 13 to transmit the video file from the library 11 to the local cache similar to cache 15 in FIG.1, in sufficient time to meet the schedule.” Therefore, Greenwood does teach transmitting content data “substantially on the determined unused bandwidth” as recited in the claim.

In response to applicant's argument with respect to claim 18 that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case,

Greenwood patent (US 5,568,181) discloses an interactive video distribution system that determining the available bandwidth and transmitting data base on the available bandwidth. Davies et al. (US 6,483,805) disclose a method and apparatus for measuring and controlling the load carried by a telecommunications system for transactional applications (col. 1 lines 7-10). At col. 8 lines 53-56 where Davies clearly disclose "The flow control mechanism (congestion mechanism means) used by TCP is complex and is designed to allow TCP adapt to the available transmission bandwidth and congestion state of virtually any transmission link." Therefore, Davies' reference is incorporated in Greenwood's reference with the motivation being to provide the flow control mechanism (congestion mechanism means).

In response to applicant's argument with respect to claim 46 that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Greenwood patent (US 5,568,181) discloses an interactive video distribution system that determining the available bandwidth and transmitting data base on the available bandwidth. Johnson et al. patent (US 6,775,271) disclose switching system and method for communicating information at a customer premises. The applicant attention is directed to Johnson et al. patent at col. 7 lines 18-27 where Johnson et al. clearly teach

"switch/router 30 preferably combines multiple incoming ATM stream on a single VC for communication to a subscriber 12. Switch/router 30 collects the ATM cells corresponding to a particular ATM frame, which may arrive at switch/router 30 on a number of different VCs, interleaved with other frames arriving on the VCs, until all the cells for that frame have been received within switch/router 30. The cells for that frame are then assembled and the complete frame is forwarded for communication to subscriber device 12 on a single VC". Johnson et al. teach further at col. 8 lines 39-42 "Similarly, packets arriving at switch/router 30 from a server 24 are formatted into the PPP format and gracefully inserted into the PPP stream sent back to the subscriber device 12." (transmitting the content data stored on the at least one second server (figure 1, reference 24) to a data switch (ATM switch means) proximate to the at least one second server means and integrating the content data transmitted from the at least one second server (figure 1, reference 24) with other data destined to at least one end user terminal (figure 1, reference 12) received at the data switch via the common link means). At col. 4 lines 8-10 (figure 1), Johnson et al disclose "Network access switch 14 communicates voice and data signals between the subscriber device 12 and external network using one or more links 20". Johnson et al disclose further at col. 12 lines 41-44 "IMA functionality may be distributed among multiple network access switch 14 as a component of switch/routers 30 within the access network switches 14 (distributing the integrated data from the data switch to a link to equipment of the at least one end user terminal via a multiplexer means). Therefore, Johnson et al reference and Greenwood reference does teach all limitation recited in the claim.

Furthermore, Johnson et al reference is incorporated in Greenwood reference with the motivation being to provide a switching system at a customer premises communicates information associated with one or more subscribers (col. 1 lines 63-65).

Conclusion

15. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

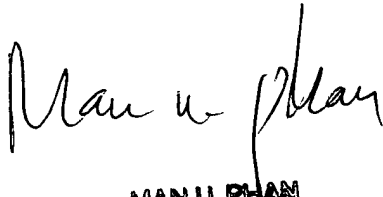
16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan D. Nguyen whose telephone number is 571-272-3153. The examiner can normally be reached on M-F (7:00AM-4:30PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Huy Vu can be reached on 571-272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2665

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TN
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MAN U. PHAN
PRIMARY EXAMINER